

AMENDMENTS TO THE CLAIMS

1. (currently amended) A device for electrical contacting or for the isolation of organic or inorganic semiconductors in electronic or optoelectric devices comprising

a substrate, either in the form of

a) a contact material consisting of an organic or inorganic electrical conductor, or

b) an isolating material consisting of an organic or inorganic dielectric; and

a patterned or unpatterned charge transfer material, which is on or at a surface of the substrate and which forms a charge transfer complex with an organic or inorganic semiconductor,

wherein the charge transfer material

a) comprises charge transfer components in the form of donors or acceptors,

b) forms a self-assembling layer of one or more atomic and/or molecular layers,

c) has a direct or indirect bond to the surface of the substrate, and

~~d) forms a charge transfer complex with an organic or inorganic semiconductor, wherein the charge transfer material~~

d) forms a donor material in the charge transfer complex if the semiconductor is an acceptor or forms an acceptor material in the charge transfer complex depending

~~upon respectively whether~~ if the semiconductor ~~itself~~ is a
~~an acceptor or donor material.~~

2. (previously presented) A device according to claim 1, wherein the bond to the surface of the substrate is a chemical or electrostatic bond or a combination thereof.

3. (previously presented) A device according to claim 1, wherein the charge transfer material is an organic compound.

4. (previously presented) A device according to claim 1, wherein the organic compound comprises a functional group which forms the bond to the surface of the substrate.

5. (previously presented) A device according to claim 4, wherein the functional group is material selective and forms the bond to a specific substrate material.

6. (previously presented) A device according to claim 1, wherein the charge transfer material is provided at the surface of the substrate and the device further comprises a connection layer without charge transfer components provided between the surface of the substrate and the charge transfer material, wherein the connection layer forms a bond to the

surface of the substrate and a bond to the charge transfer material.

7. (previously presented) A device according to claim 6, wherein the bonds of the connection layer each is a chemical or electrostatic bond or a combination thereof.

8. (previously presented) A device according to claim 6, wherein the connection layer is formed of an organic bonding agent.

9. (previously presented) A device according to claim 8, wherein the organic bonding agent is formed of DNA molecules, such that the one half strand of a DNA molecule is bonded to the surface of a substrate and the complementary second half strand of the DNA molecule is bonded to the charge transfer material.

10. (previously presented) A device according to claim 1, wherein the charge transfer material is an atomic or molecular inorganic compound.

11. (previously presented) A device according to claim 10, wherein the charge transfer inorganic compound is provided on the surface of the substrate and is formed of a material which reacts chemically with the substrate and which

forms a connection layer consisting of a chemical compound of the substrate material and the inorganic compound between the substrate and the inorganic compound.

12. (previously presented) A device according to claim 10, wherein the charge transfer inorganic compound is provided at the surface of the substrate and the device further comprises a connection layer provided between the substrate and the inorganic compound, wherein the connection layer comprises a chemical compound of the substrate material or a material with similar chemical properties, and the charge transfer inorganic compound.

13. (previously presented) A method for fabricating a device of claim 1 which comprises

providing a charge transfer material as a patterned or unpatterned self-assembling layer of one or more atomic or molecular layers on or at a surface of the substrate, wherein the charge transfer material includes charge transfer components in the form of donors and/or acceptors,

forming a direct or indirect bond between the charge transfer material and the surface of the substrate,

and forming a charge transfer complex of the charge transfer material together with a thereabove adjacently provided organic or inorganic semiconductor, wherein the charge transfer material forms a donor or acceptor material

in the charge transfer complex depending upon respectively whether the semiconductor itself is an acceptor or donor material.

14. (previously presented) A method according to claim 13, which further comprises forming the bond as a chemical or electrostatic bond or a combination thereof.

15. (previously presented) A method according to claim 13, which further comprises selecting the charge transfer material as an organic compound.

16. (previously presented) A method according to claim 15, which further comprises selecting the organic compound with a functional group which forms the bond to the surface of the substrate.

17. (previously presented) A method according to claim 16, which further comprises selecting the functional group as a material-selective group such that the bond is formed to a specific substrate material.

18. (previously presented) A method according to claim 13, wherein the charge transfer material is provided at the surface of the substrate, and which further comprises providing a connection layer without charge transfer

components between the surface of the substrate and the charge transfer material, and forming the connection layer with a bond to the surface of the substrate and with a bond to the charge transfer material.

19. (previously presented) A method according to claim 18, which further comprises forming each bond in the connection layer as a chemical or electrostatic bond or a combination thereof.

20. (previously presented) A method according to claim 18, which further comprises forming the connection layer of an organic bonding agent.

21. (previously presented) A method according to claim 20, which further comprises forming the organic bonding agent of DNA molecules, such that the one half strand of a DNA molecule is bond to the surface of the substrate and the complementary second half strand of the DNA molecule is bond to the charge transfer material.

22. (previously presented) A method according to claim 13, which further comprises selecting the charge transfer material as an atomic or molecular inorganic compound.

23. (previously presented) A method according to claim 22, wherein the charge transfer inorganic compound is provided on the surface of the substrate, and which further comprises forming the inorganic compound of a material which reacts chemically with the substrate such that between the substrate and the inorganic compound a connection layer consisting of a chemical compound of the substrate material and the inorganic compound is formed.

24. (previously presented) A method according to claim 22, wherein the charge transfer inorganic compound is provided at the surface of the substrate, and which further comprises providing a connection layer consisting of a compound of the substrate material or a material with similar chemical properties, and the inorganic compound, between the substrate and the inorganic compound.

25. (currently amended) A device for electrical contacting or for the isolation of organic or inorganic semiconductors in electronic or optoelectric devices comprising

a substrate, either in the form of

a) a contact material consisting of an organic or inorganic electrical conductor, or

b) an isolating material consisting of an organic or inorganic dielectric; and

a patterned or unpatterned charge transfer material, which is on or at a surface of the substrate and which forms a charge transfer complex with an organic or inorganic semiconductor,

wherein the charge transfer material

a) comprises charge transfer components in the form of donors or acceptors,

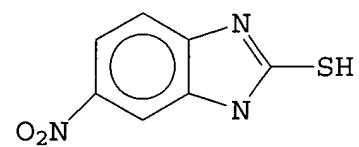
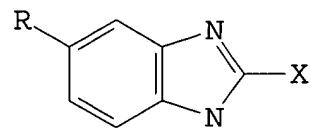
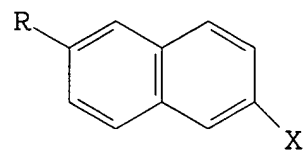
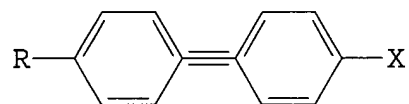
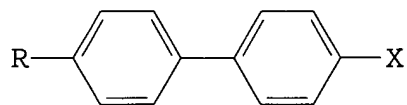
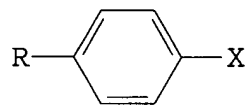
b) forms a self-assembling layer of one or more atomic or molecular layers,

c) has a direct or indirect bond to the surface of the substrate,

~~d) forms a charge transfer complex with an organic or inorganic semiconductor, wherein the charge transfer material~~

d) forms a donor material in the charge transfer complex if the semiconductor is an acceptor or forms an acceptor material in the charge transfer complex depending upon respectively whether if the semiconductor itself is a
~~an acceptor or donor material, and~~

e) is made from inorganic charge transfer compound or an organic charge transfer compound selected from the group consisting of



wherein R is F, Cl or NO₂ and X is -NC or SH.